

AMENDMENT

Please amend the application without prejudice, without admission, without surrender of subject matter, and without any intention of creating any estoppel as to equivalents, as follows:

In the Claims

1. (Currently amended) An isolated nucleic acid molecule encoding a protein with the function of a potato β -amylase, selected from the group consisting of:

- a) a nucleic acid molecule encoding ~~molecules which encode a protein which encompasses~~ the amino acid sequence of ~~stated under~~ SEQ ID NO: 2;
- b) a nucleic acid molecule having ~~molecules which encompass~~ the nucleotide sequence of ~~shown under~~ SEQ ID NO: 1; ~~or~~
- c) a nucleic acid molecule encoding a protein with ~~molecules which have~~ at least about 85% sequence identity with SEQ ID NO:2; SEQ ID NO:1;
- d) a nucleic acid molecule ~~molecules~~ which hybridizes under stringent conditions with, or is ~~are~~ complementary to, the nucleic acid molecules stated under a) or b), wherein hybridization is performed at a temperature of 68°C in buffer comprising 2X SSC or 7% SDS; and
- e) a nucleic acid molecule ~~molecules~~ whose nucleotide sequence deviates from the sequence of the nucleic acid molecules stated under a)-d) ~~a), b) or c)~~ owing to the degeneracy of the genetic code.

2. (Currently amended) A recombinant nucleic acid molecule containing:

- a) the nucleic acid molecule encoding a protein with the function of a potato β -amylase as claimed in claim 1, and
- b) one or more nucleotide sequences which encode one or more proteins, wherein the one or more proteins are selected from group A; the group consisting of branching enzymes, ADP glucose pyrophosphorylases, granule-bound starch synthases, soluble starch synthases, debranching enzymes, disproportioning enzymes, plastid starch phosphorylases, R1-enzymes, amylases, and glucosidases; or , and nucleic acid molecules which hybridize under stringent conditions with said nucleotide sequences, wherein hybridization is performed at a temperature of 68°C in buffer comprising 2X SSC or 7% SDS.

3. (Previously amended) The nucleic acid molecule as claimed in claim 1, which is a deoxyribonucleic acid molecule.

4. (Previously amended) The nucleic acid molecule as claimed in claim 2, which is a cDNA molecule.

5. (Previously amended) The nucleic acid molecule as claimed in claim 1, which is a ribonucleic acid molecule.

6. (Cancelled)

7. (Previously amended) A vector comprising the nucleic acid molecule as claimed in claim 1.

8. (Previously amended) A vector comprising a the nucleic acid molecule as claimed in claim 1, wherein the nucleic acid molecule encoding a protein with the function of a β -amylase is present in sense orientation.

9. (Currently amended) A vector comprising the nucleic acid molecule as claimed in claim 2, wherein the nucleic acid molecule encoding a β -amylase and the nucleotide sequence encoding one or more proteins of (b) selected from group A are present in sense orientation.

10. (Previously amended) A vector comprising a nucleic acid molecule as claimed in claim 2, comprising nucleotide sequences which encode a plurality of proteins selected from group A, wherein at least one nucleotide sequence is in sense orientation and at least one nucleotide sequence is in antisense orientation.

11. (Previously amended) A vector comprising the nucleic acid molecule as claimed in claim 1, which is linked to regulatory elements which ensure transcription and synthesis of an RNA, which is optionally translatable, in a pro- or eukaryotic cell.

12. (Currently amended) A host cell which is transformed with the nucleic acid molecule as claimed in one or more of claims 1-5 ~~1-6~~ or a vector as claimed in one or more of claims 7-11 or a cell which is derived from the host cell ~~cell~~.

13. (Currently amended) A process for the generation of a transgenic plant cell which synthesizes a modified starch, comprising integrating the nucleic acid molecule as claimed in one or more of claims 1-5 ~~1-6~~ or a vector as claimed in claim 7-11 into the genome of a plant cell.

14. (Previously amended) A plant cell which is obtained by the process as claimed in claim 13.

15. (Previously amended) A process for generating a transgenic plant which synthesizes a modified starch comprising regenerating an intact plant from the cell as claimed in claim 14.

16. (Previously amended) A plant comprising the plant cell as claimed in claim 14.

17. (Previously amended) The plant as claimed in claim 16, which is a useful plant.

18. (Previously amended) The plant as claimed in claim 16, which is a starch-storing plant.

19. (Previously amended) The plant as claimed in claim 16, which is a wheat, maize, potato or rice plant.

20. (Previously amended) Propagation material of the plant as claimed in claim 16.

21. (Previously amended) A process for the production of starch comprising isolating starch from the plant cell as claimed in claim 14, the plant as claimed in claim 16 or propagation material as claimed in claim 20.

22-25. (Cancelled)

26. (Currently amended) The nucleic acid molecule of claim 2, wherein the one or more proteins ~~selected from group A~~ are glucosidases.

27. (Currently amended) An isolated recombinant nucleic acid molecule encoding a fragment of a potato β -amylase of SEQ ID NO:2, wherein the fragment is at least about ~~45~~ 100 nucleotides in length, and wherein the nucleic acid molecule inhibits synthesis of endogenous β -amylase when introduced into plants.

28. (Cancelled)

29. (Previously added) The nucleic acid molecule of claim 27, wherein the fragment is at least about 500 nucleotides in length.

30. (Previously added) The nucleic acid molecule of claim 27, wherein the synthesis of endogenous β -amylase is inhibited by cosuppression.

31. (Previously added) The nucleic acid molecule of claim 27, wherein the synthesis of endogenous β -amylase is inhibited by antisense.

32. (Previously added) A vector comprising the nucleic acid molecule of claim 27.

33. (Previously added) The vector according to claim 32, wherein the nucleic acid molecule encoding the fragment of a β -amylase is present in antisense orientation.

34. (Currently amended) An isolated recombinant nucleic acid molecule comprising:

- (a) at least one sequence encoding a fragment of a potato β -amylase of SEQ ID NO:2; and
- (b) at least one sequence encoding a fragment of one or more proteins selected from the group consisting of branching enzymes, ADP glucose pyrophosphorylases, granule-bound starch synthases, soluble starch synthases, debranching enzymes, disproportioning enzymes, plastid starch phosphorylases, R1-enzymes, amylases, and glucosidases,

wherein the fragments are at least about ~~45~~ 100 nucleotides in length, and wherein the nucleic acid molecule inhibits synthesis of endogenous β -amylase and endogenous protein of (b) when introduced into plants.

35. (Previously added) The nucleic acid molecule of claim 34, wherein the fragments are at least about 150 nucleotides in length.

36. (Previously added) The nucleic acid molecule of claim 34, wherein the fragments are at least about 500 nucleotides in length.

37. (Previously added) The nucleic acid molecule of claim 34, wherein the protein is glucosidase.

38. (Previously added) The nucleic acid molecule of claim 34, wherein the synthesis of endogenous β -amylase and endogenous protein(s) of (b) is inhibited by cosuppression.

39. (Previously added) The nucleic acid molecule of claim 34, wherein the synthesis of endogenous β -amylase and endogenous protein(s) of (b) is inhibited by antisense.

40. (Previously added) A vector comprising the nucleic acid molecule of claim 34.

41. (Previously added) The vector according to claim 40, wherein the sequence encoding the fragment of a β -amylase is present in antisense orientation.

42. (Previously added) The vector according to claim 40, wherein the sequence encoding the fragment of the protein(s) of (b) is present in antisense orientation.